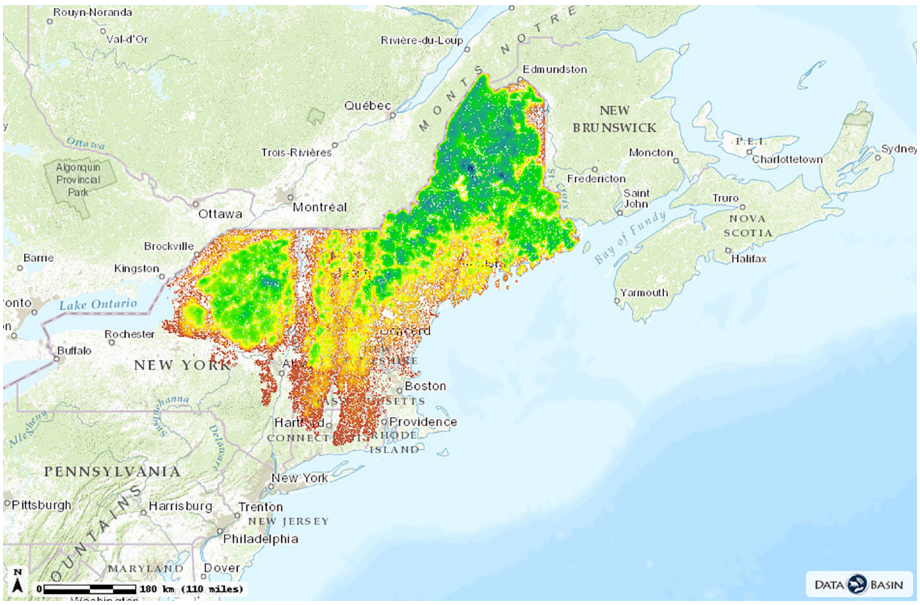
Scenario planning to inform land and wildlife management

A pilot project for boreal forests in Northeastern United States

Phase 1: Process and scoping



Map depicting the results of a landscape capability model for moose in the Northeast United States., based on current conditions. Courtesy of North Atlantic LCC, University of Massachusetts Amherst and Northeast Climate Science Center northatlanticlcc.org.

Climate change, the boreal forest, and moose

Climate-related changes that are already underway and projected to continue through this century are unparalleled in recent history and present unprecedented challenges to land and wildlife management. The southern distribution of the boreal forest occurs across northern New England and northern New York, providing habitat for several iconic wildlife species of the region. It is widely acknowledged that climate change poses risks to these boreal systems and many associated species, including moose. While moose have documented thermal tolerances and habitat requirements, uncertainties remain regarding the pathways through which climate change might affect the species and the nature and timing of its response. These uncertainties present an opportunity to proactively consider the implications of climate change for future management and conservation of this species from a multi-state perspective. Scenario planning is one method for addressing climate change uncertainties in land and wildlife management. This pilot project will be designed to showcase how scenario planning might be useful for informing land and wildlife management decisions in the boreal forest transition zone of the Northeast, as well as other ecosystems, species, and geographies.

Project objectives

1. Develop a set of scenarios (3-5) based on uncertain aspects of climate change and ecological response in northeastern boreal forests relevant to moose and other species and ecosystems in the region.
2. Apply scenarios to explore management implications for moose and identify specific climate-informed management options.
3. Support at least one state wildlife management agency to incorporate information from the pilot scenario-planning project into their State Wildlife Action Plan and/or other relevant management plan.
4. Document and share the scenario planning pilot process and outcomes.

Project Highlights

Phase 1 is underway and we looking ahead to Phase 2 of the scenario planning process. One recent development includes the design of this 'newsletter', through which we will share information about the project (e.g., recent activities, interim products) on a monthly basis. Read on for more information about this workshop, events, and a project timeline for the first half of 2015.

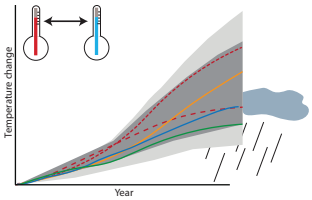
On the calendar

1. Two-day science meeting in Amherst, MA bringing together experts in moose biology, forest ecology, and climatology to synthesize the relevant science related to effects of climate change on moose, and identify areas of uncertainty. Synthesis products from this science workshop will be important for informing Phase 2 of the project (Developing scenarios) in spring 2015.
2. Science synthesis webinar sharing outcomes from the science meeting, targeted at the moose management community.

Phase 1 Process and scoping

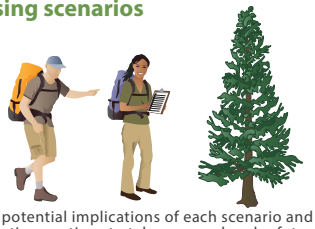
Assemble experts and stakeholders to define project outcomes, identify key drivers within the system, and develop a planning timeline.

Phase 2 Building and refining scenarios



Identify, assess, and prioritize the critical drivers within the system and develop scenarios.

Phase 3 Using scenarios



Evaluate the potential implications of each scenario and identify and lay out actions options to take now and under future conditions. Design monitoring and research to track changes and action effectiveness.

Scenario planning is a comprehensive exercise that involves the development of scenarios that capture a range of plausible future conditions. The basic steps to scenario planning can be broken down into the three phases as described above.

Developing the process & scoping

In September 2014, project partners settled on the transitional boreal forest and moose in the four northern New England states and Upstate New York as a focus for this pilot effort. Since then, we have been steeped in networking and project planning. Key advances include:

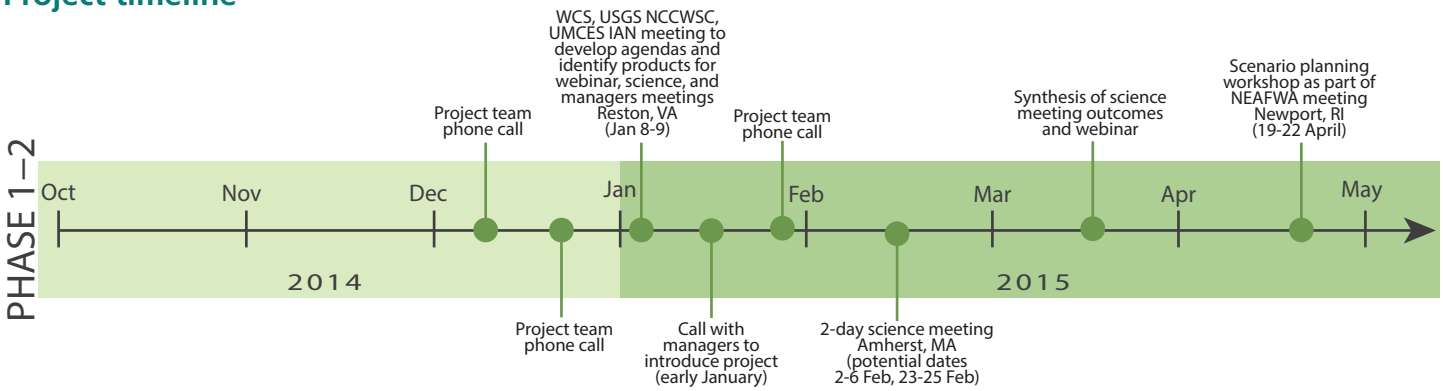
- The creation of a project summary document distributed to researchers and state agency managers in the project area to solicit interest (Please contact erowland@wcs.org for a copy).
- Planning and logistics discussions between USGS and WCS project leads.
- A meeting at the USGS Northeast Climate Science Center between moose researchers (Steve DeStefano, Dave Wattles), forest ecologist (Tony D'Amato), NE-CSC staff, and Shawn Carter and Laura Thompson (NCCWSC) to begin discussions about the existing science.
- Initial compilation of moose and climate change research relevant to the project area.
- Discussions with organizers of the NEAFWA and Northeast Moose Group annual meetings regarding opportunities to tack-on project activities and information sessions to these conferences.
- Drafting a project website using the Google platform.
- The launch of the monthly project update newsletter.

Envisioning Phase II: Building and refining scenarios

Moving into the spring we hope to capitalize on both the NEAFWA Conference (April) and the Northeast Moose Group meeting (May), to tack-on project-related meetings with interested managers. For NEAFWA, we will propose to offer a session introducing scenario planning and engaging participants in hands-on exercises (built off of science synthesis materials). At the May meeting, we hope to work with moose managers to develop, evaluate, and possibly start to apply scenarios to moose and habitat management decisions. Additional meetings and/or conference calls may be scheduled throughout the spring and summer of 2015, depending on needs and progress made.

Participants in a climate change adaptation workshop work to identify the potential impacts of climate change on forests, proposed management actions, and the expected short- and long-term outcomes of actions. In Phase 1 of the project, partipants will develop, evaluate, and possibily beging to apply scenarios to moose and habitat management decisions. Photos © Molly Cross, WCS.

Project timeline



WILDLIFE CONSERVATION SOCIETY

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LANDSCAPE CONSERVATION COOPERATIVES

Organizations Involved: Wildlife Conservation Society (WCS), US Geological Survey (USGS) National Climate Change and Wildlife Science Center, Department of Interior Northeast Climate Science Center, North Atlantic Landscape Conservation Cooperative, Massachusetts Division of Fisheries and Wildlife, New York State Department of Environmental Conservation, US Forest Service Northern Institute for Applied Climate Science, New York Cooperative Fish and Wildlife Research Unit, University of Maryland Center for Environmental Science.

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